

REMARKS

In response to the Office Action mailed on 21st April, 2005, Applicant wishes to enter the following remarks for the Examiner's consideration.

Applicant has amended claims 1, 6-8, 11, 12, 18, 19, 22, 24-27, 29, 30, and 32-25. Applicant has cancelled without prejudice claims 17, 21 and 28.

Claims 1-16, 18-20, 22-27 and 29-36 are pending in the application.

Rejection of claims under 35 USC §102(b)

Claims 1, 2, 4-6, 12, 13, 15, 16, 18, 19 and 32-34 have been rejected under 35 USC §102(b) as being anticipated by Rocha (Patent No. US 4,528,502).

Applicant respectfully traverses this rejection of the claims in light of the amendments to the claims.

Claim 1 has been amended to include all of the limitations of claim 21 and its base claim, which the examiner has indicated as being allowable if written in independent form.

Claims 2-6 depend from claim 1. Claim 6 has been amended to be consistent with amended claim 1.

Claim 12 has been amended to include all of the limitations of claim 17, which the examiner has indicated as being allowable if written in independent form. Claims 13-16 depend from claim 12.

Claim 18 calls for a plurality of current sensors sharing a single common reference conductor (the second electrical conductor). Rocha teaches two sensors in an integrated configuration, but does not teach that the sensors share a common reference conductor. In particular, Rocha column 2 lines 5-14 describes the use of square root circuitry to provide an

output voltage proportional to the current. This configuration is shown in FIG. 3 of the Rocha reference. In this configuration, no reference current is used. The current I passes through both conductors, resulting in a force on the piezo element that is proportional to the square of the current. This teaches away from the use of a reference current. Further, the two-sensor system disclosed by Rocha is only capable of measuring a single current (as shown in the FIG. 3 and the specification column 2, lines 5-13, column 5, lines 28-63). In contrast, each of the plurality of first conductors in claim 18 is capable of carrying a current to be sensed. Thus the sensor of claim 18 can simultaneously measure a plurality of currents using a single reference current. This is not taught, suggested, disclosed or otherwise anticipated by the Rocha reference.

Claim 19 has been amended to include all of the limitations of claim 21, which the examiner has indicated as being allowable if written in independent form.

Claims 32-34 have been amended to depend from claim 29. Claim 29 has been rewritten in independent form to include all of the limitations of the base claim. The examiner has indicated that claim 29 will be allowable in this form.

In light of the foregoing amendments and remarks, Applicant respectfully submits that the Rocha reference does not teach, suggest, disclose or otherwise anticipate the recitations of the claims as amended. Applicant submits that all of the claims 1, 2, 4-6, 12, 13, 15, 16, 18, 19 and 32-34 are now in a form for allowance. Applicant thus respectfully requests that

this basis of rejection of the claims be withdrawn and that a Notice of Allowance for these claims be mailed at the Examiner's earliest convenience.

Rejection of claims under 35 USC §103(a)

Claims 3, 6, 9, 10, 14, 17, 20, 35 and 36 have been rejected under 35 USC §103(a) as being unpatentable over Rocha (Patent No. US 4,528,502). The Examiner acknowledges that the Rocha reference fails to teach, disclose or suggest the recitations of the claims, and opines that such recitations are obvious to one of ordinary skill in the art in view of the teachings of Rocha. Applicant respectfully traverses this rejection of the claims in light of the amendments to the claims.

Claims 3, 6, 9 and 10 depend from claim 1. Claim 1 has been amended to include all of the limitations of claim 21, which the examiner has indicated as being allowable if written in independent form.

Claim 14 depends from claim 12. Claim 12 has been amended to include all of the limitations of claim 17, which the examiner has indicated as being allowable if written in independent form.

Claim 17 has been cancelled without prejudice, since it is equivalent to amended claim 12.

Claim 20 depends from claim 19. Claim 19 has been amended to include all of the limitations of claim 21, which the examiner has indicated as being allowable if written in independent form.

Claim 35 has been amended to call for the reference current in the second conductor to be a *modulated* current to facilitate measurement of a *direct* current. Support for this amendment is provided by claim 22, for

example, which the examiner has indicated to be allowable if rewritten in independent form. Support is also provided in the specification on page 13, line 19 to page 14, line 5.

Claim 36 depends from claim 35.

In light of the foregoing remarks, Applicant respectfully submits that the Rocha fails to teach, disclose, suggest or otherwise render obvious the recitations of claims 3, 6, 9, 10, 14, 20, 35 and 36. Applicant thus respectfully requests that this basis of rejection of the claim be withdrawn and that a Notice of Allowance for these claims be mailed at the Examiner's earliest convenience.

Allowable Subject Matter

The examiner has indicated that claims 7, 8, 11, 17, 21-27, 29 and 30 would be allowable if rewritten in independent form including all of the limitations of the base claim. Claims 7, 8, 11, 22-27, 29 and 30 have been rewritten in independent form including the limitations of the base claim and any intervening claims. Claim 17 has been incorporated into base claim 12; hence claim 17 is rewritten in independent form as claim 12. Claim 21 has been incorporated into base claim 19; hence claim 21 is rewritten in independent form as claim 19. Applicant thus respectfully requests that the objection to these claims be withdrawn and that a Notice of Allowance for the claims be mailed at the Examiner's earliest convenience.

In light of the foregoing amendments and explanations, applicant submits that all rejections of and objection to claims 1-16, 18-20, 22-27 and 29-36 have been overcome. Allowance of these claims is therefore respectfully requested at the Examiner's earliest convenience. Although additional arguments could be made for the patentability of each of the claims, such arguments are believed unnecessary in view of the above discussion. The undersigned wishes to make it clear that not making such arguments at this time should not be construed as a concession or admission to any statement in the Office Action.

Please contact the undersigned if you have any questions regarding this application.

Respectfully submitted,



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